UNIT-7 Principles of Healthy Eating

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Describe recommended daily intakes for a healthy balanced diet.
- ✓ Explore different types of cooking methods.

Unit 7

Principles of Healthy Eating

Recommended Dietary Intakes for a Healthy Balanced Diet

The key to a healthy balanced diet is not to ban or omit any foods or food groups but to balance what we eat by consuming a variety of foods from each food group in the right proportions for good health. The five food groups of healthy food are:

- Fruit and vegetables;
- Bread and cereals;
- Milk and dairy products;
- Meats/alternatives; and
- Drinks

Fruit and Vegetables

These should make up about a third of our daily diet and can be eaten as part of every meal, as well as, being the first choice for a snack. One serving of vegetables equals:

- 1 cup of salad;
- 1/2 cup of vegetables or legume; and
- 1 potato

One should eat at least five portions of fruit and vegetables each day. Research suggests this can help a person protect against cancer, obesity, and various chronic diseases, such as, heart disease. This is because of the unique package of nutrients and plant compounds they contain.

Bread, Rice, Potatoes and Pasta

This food group should also make up about a third of our diet. One serving of breads and cereals equals:

- 2 slices of bread or 1 bread roll;
- 1 cup of cooked rice, pasta, and noodles; and
- 1 1/3 cups flaky breakfast cereal, 1/2 cup muesli or 1 cup cooked porridge.

When selecting products from this food group, choose unrefined carbohydrates over those that have been refined, as they will contain the whole of the grain. Wholegrain foods are rich in fibre and other nutrients that have many health benefits, and people who consume wholegrain seem to have a reduced risk of certain cancers, diabetes, and coronary heart

disease. The final third choice is made up of three groups containing foods that need to be consumed in smaller proportions than the other two principal categories. These food groups also contain nutrients essential to our diet, so it's important not to leave them out altogether.

Milk and Dairy Foods

These should be eaten in moderation because of their high saturated fat content, but they're an important source of calcium, which is essential for healthy bones and teeth. Low-fat or reduced-fat versions should be chosen.
One serving of dairy equals:

- 1 glass of milk (250ml) or calcium fortified soy milk;
- 40g cheese; and
- 200g carton of low fat yoghurt or 1 cup of custard

Meat, Fish, Eggs and Beans

This food group includes both animal and plant sources of protein, which is a major functional and structural component of all cells. Protein provides the body with between 10 and 20 per cent of its dietary energy, and is needed for growth and repair.

One serving of meat and alternatives equals:

- 85g cooked lean beef, lamb, veal, pork, or chicken;
- 100g cooked fish;
- Two eggs; and
- 1/2 cup cooked dried beans, lentils, or chickpeas or 1/3 cup peanuts or almonds

Foods and Drinks High in Fat and/or Sugar

This group should make up the smallest section of our diet including foods that should only be eaten sparingly because, although they're an important energy source, they contain very few nutrients and are often known as 'empty calories'. Health food guidelines classify a serve of healthy fats as 2 teaspoons of oil or 3 teaspoons of unsaturated margarine, 10 unsalted nuts or 2 tablespoons of avocado. Foods from this group are high in unhealthy components such as saturated fat, trans. fatty acids, sugar, and salt - all of which are associated with an increased risk of developing certain diseases.

They should only be eaten as occasional treats or to increase the palatability of other important foods (such as olive oil on salads, a scraping of spread on bread, or a sprinkling of sugar on some tart fruits).

Choosing the Right Food

Energy Density

This is the amount of stored energy in food. Just 1g of fat provides nine calories, which is more than double the calories in 1g of protein or carbohydrate. This means one can feel fuller on fewer calories on choosing the right foods, and in the long term is less likely to gain weight

Bread Cereals and other Starchy Foods

Refined and Unrefined Grains

The foods listed above (apart from potatoes) are all produced from grains, such as wheat, corn, or rice. They should be a part of all meals, filling about a third of our plate. They can come in two forms – refined or unrefined (often known as whole grains). Refined grains have been stripped of their outer bran coating and inner germ during the milling process, leaving only the endosperm. They include white rice, white bread and white pasta. In a whole grain the bran, germ and endosperm are all still present. The bran is an excellent source of fibre; the germ is a source of protein, vitamins and minerals; and the endosperm supplies most of the carbohydrates, mainly in the form of starch. Unrefined or whole grain forms provide far more nutrients than their refined counterparts. Whole grains are rich in phytochemicals and antioxidants, which help to protect against coronary heart disease, certain cancers, and diabetes. Studies have shown people who eat more whole grains tend to have a healthier heart.

Most people get their whole grain from wholemeal bread or whole grain breakfast cereals such as, porridge, muesli, or whole wheat cereals. Choose a whole grain variety over processed or refined grains, and look out for added sugar or salt. Other whole grains include:

- Wheat ;
- Oats;
- Maize;
- Barley;
- Rye;
- Millet;
- Quinoa; and
- Wild rice

Fibre

Dietary fibre is found in plant foods (fruit, vegetables and whole grains) and is essential for maintaining a healthy digestive system. Fibre cannot be fully digested and is often called bulk or roughage. The two types of fibre found in food are soluble and insoluble.

Soluble fibre, which can dissolve in water, is found in beans, fruit, and oat products, and can help lower blood fats and maintain blood sugar. Insoluble fibre cannot dissolve in water, so it passes directly through the digestive system. It is found in whole grain products and vegetables and it increases the rate at which food passes through the gut. Evidence for health benefits of fibre are as follows –

- High-fibre foods take longer to digest, so keep us feeling fuller for longer. The slow and steady digestion of food through the gut helps control blood sugar and assists with weight maintenance;
- Fibre helps in the digestive process and can help lower blood cholesterol;
- Fibre promotes bowel regularity and keeping the gastrointestinal tract clean to help reduce the risk of developing diverticular disease and constipation; and
- A high-fibre diet may reduce the risk of developing diabetes and colorectal cancer.

How much is enough?

- Bread, rice, potatoes, pasta, and other starchy foods should make up about one third of our diet.

Glycaemic Index (GI)

The Glycaemic Index (GI) is a way of ranking carbohydrate foods based on how quickly they increase blood sugar levels. Low GI foods are especially helpful for people with diabetes, who need to have more control over their blood sugar levels than the general population. Ideally foods with a low GI, such as those rich in soluble fibre like oats and legumes, should be eaten more frequently than those with a high GI. But the texture, type of cooking or processing used, and the amount and type of sugars present can all affect the GI.

Since foods are often consumed as part of a meal or snack, it can be difficult to calculate the GI. Focusing on unrefined, high-fibre, whole grain cereals, and minimising rapidly absorbed, refined cereals and sugary foods will all help to lower the GI of the diet.

Fats and Sugars

This group, which includes foods such as cakes, biscuits, sweets, sugar-sweetened drinks, and crisps, should make up the smallest section in our diet.

Fat Facts

- Fat transports the fat-soluble vitamins A, D, E, and K around the body;
- It can often improve the flavour and perception of foods, increasing their palatability;
- It supplies essential nutrients such as fat-soluble vitamins and Essential Fatty Acids (EFAs);
- EFAs must be supplied from the diet and are thought to have a positive effect on heart health and the immune system;
- It plays a big role in membrane structure;
- It cushions and protects the internal organs; and
- It's stored in adipose tissue (a thick layer of tissue under the skin) as a long-term fuel reserve.

Excess fat may also accumulate around your organs, especially in the abdominal cavity, Fat is a concentrated source of energy. Just 1g provides nine calories - more than double the calories in 1g of protein or carbohydrate.

This means it's much easier to consume too many calories when eating high-fat foods. People trying to manage their weight should reduce fatty foods to help cut calories. We all need some fat in our diets, but small quantities of EFAs are key to good health.

The Two Types of Fat

Fat can be divided into two main groups - **saturated and unsaturated.**

Saturated fat is generally solid at room temperature and is usually from animal sources. It is found in lard, butter, hard margarine, cheese, whole milk, and anything that contains any of these ingredients, such as cakes, chocolate, biscuits, pies, and pastries. The white fat which we see on red meat and underneath poultry skin is the saturated fat which is associated with increased blood cholesterol concentrations and an increased risk of heart disease. Eating less helps to minimise the risks it poses to heart health.

Unsaturated fat is usually liquid at room temperature and generally comes from vegetable sources. Monounsaturated and polyunsaturated fats are both included in this group. Unsaturated vegetable oils are a healthier alternative to saturated fat and can be found in sesame, sunflower, Soya and olive oil, soft margarine and in foods such as oily fish, including mackerel, sardines, pilchards, and salmon. When possible, we should ensure the fat we eat is unsaturated.

How much is Enough?

Government guidelines recommend that fats should make up no more than 35 percent of the energy in our diet and saturated fats should provide less than 11 per cent of total energy intake. For the average woman, this means about 70g of total fat a day; for men, roughly about 95g. The latest National Diet and Nutrition Survey showed that, on average, UK adults consume about the right amount of fat, but that the intake of saturated fats is currently too high for good health (at present they provide about 13 per cent of total energy).

To reduce the amount of fat in the diet, a person should:

- Look for alternatives to cakes, biscuits, and savoury snacks, which are often high in fat ;
- fresh fruit, dried fruit, and cereal-based products;
- Trim any visible fat off meat and poultry;
- Buy lean cuts of meat and reduced-fat minces;
- Poach, steam, grill or bake food rather than fry it;
- Swap whole milk for semi-skimmed or skimmed;
- Opt for low-fat dairy products; and
- Use olive oil and low-fat spreads instead of using lard or hard margarine.

Sugary Foods

There are two types of sugar - those found naturally in fruit and milk (which are fine and don't need to be cut down) and those that are added to the diet. These added sugars can be found in a variety of foods including confectionery, soft drinks, desserts, and breakfast cereals.

Added sugars are a great source of energy, but provide no other nutrients. Sugary foods and drinks pose a threat to dental health, especially if consumed between meals. Even the sugars in honey and fruit juices can cause tooth decay if good oral hygiene isn't followed and we consume a lot of these foods. One can have sugary foods at mealtimes only, when other dietary and oral factors can help to minimise the risk they pose to the teeth. Sugary drinks have been identified as a possible cause of obesity. These drinks do not trigger the same sense of fullness as food with similar calories, increasing the risk of overeating.

How to Reduce Consumption of Sugary Foods

Sugar intake can be reduced by:

- swapping sugary drinks for water, low-fat milk, or artificially sweetened drinks to reduce the calorie intake;
- swapping sugary snacks for fruit or bread-based options such as fresh whole fruit or teacakes/malt loaf buying reduced-sugar varieties of jam and marmalade; and
- choosing tinned fruit in natural juice rather than syrup

Meat, Fish, Eggs, and Alternative Sources of Protein

Foods containing protein are:

- Meat, poultry, fish, shellfish, and eggs ;
- Pulses, nuts, and seeds; and
- Soya products and vegetable protein foods

Why is Protein Important?

From hair to fingernails, protein is a major functional and structural component of all our cells. Protein provides the body with roughly 10 to 20 per cent of its dietary energy, and is needed for growth and repair. Proteins are large molecules made up of long chains of amino acid subunits. Some of these amino acids are nutritionally essential as they cannot be made or stored within the body and so must come from foods in our daily diet. Although all animal and plant cells contain some protein, the amount and quality of this protein can vary widely.

Animal Protein

Protein from animal sources contains the full range of essential amino acids needed, which adults need in their diet. But red meat, in particular, should be eaten in limited amounts due to the high level of saturated

fat it contains, which may raise blood levels of 'unhealthy' LDL cholesterol. A high intake of saturated fat can lead to an increased risk of cardiovascular disease and other related disorders. As an alternative source of animal protein, one can choose poultry, fish and shellfish.

The 2007 World Cancer Research Fund report recommended meat eaters limit their consumption of red meat to no more than 500g a week, with very little processed meat, as these have both been linked to certain forms of cancer. Fish is a good source of animal protein. Oil-rich fish such as salmon, mackerel, herring, tuna, trout and sardines are all rich in omega-3 fatty acids, which help to reduce the risk of developing cardiovascular disease. Shellfish is also a good source of protein and is low in fat. One should aim to eat a couple of portions of fish every week, with at least one portion being an oily fish.

Vegans and Vegetarians

Vegetarians rely on plant sources for their daily protein. Plants don't contain the full range of essential amino acids and therefore are not as high in nutritional value as animal protein. But by eating a well-balanced diet that contains a variety of different foods, it is possible to consume the required amino acids, regardless of the time of day they're eaten or in what combinations within a meal. Foods such as nuts, seeds, beans, pulses, vegetable protein foods, and soya products all contain protein. There are also small amounts in grains and dairy products.

How much is enough?

Health professionals suggest men should eat 55.5g protein a day and women 45g. In practical terms, eating a moderate amount of protein - in one or two meals every day – should give us all the protein we need. Most people in the UK eat far more protein than they actually need.

Serving Size

One should eat two to three servings of protein every day from both plant and animal sources. Here are some examples of one serving (about the size of a standard pack of playing cards):

- 100g boneless meat (e.g. lean beef, lamb, or pork);
- 100g boneless poultry (e.g. chicken or turkey breast);
- 100g fish (e.g. salmon, sardines, or tuna);
- 2 medium eggs;
- 3 tablespoons of seeds (e.g. sunflower or pumpkin seeds); and
- 3 tablespoons of nuts (e.g. almonds or walnuts)

Choosing the right Protein

If low-fat protein foods are chosen to eat, then, this can help a person's health in the following ways -

- Keep the heart healthy;

- Keep cholesterol low; and
- Minimise the risk of developing cardiovascular disease and other related disorders.

Milk and Dairy Products

What Foods are in this Category?

This food group includes milk and milk products - cheese, yoghurt, and fromage frais – but not butter, margarine, or cream.

Varieties of Milk

Supermarkets now stock many different varieties of milk. The most common in the UK is still cow's milk, but others include sheep and goat's milk, as well as a number of plant-based substitutes - including soya, rice, oat, and almond milk - for those with lactose intolerance. Milk in the UK (which generally comes from cows) is distinguishable by its fat content.

- Whole or full-fat milk contains about 3.5 per cent fat
- Semi-skimmed contains about 1.7 per cent fat
- Skimmed milk contains 0.1 to 0.3 per cent fat

Even whole milk is relatively low in fat and certainly semi-skimmed milk can be labelled as a low-fat food. Contrary to popular belief, lowering the fat content in milk does not affect the calcium content, so an adequate calcium intake can still be obtained from lower-fat dairy products. However, low fat milk contains less energy and lower amounts of fat soluble vitamins and isn't suitable for children under two years.

Milk Products

Cheese contains the same beneficial nutrients as milk, but most cheeses contain much more saturated fat and high levels of added salt, so it is important to only eat full-fat cheese occasionally and then, only in small portions.

Yoghurt is rich in protein and vitamin B2: essentially the same nutrients as in milk. Some varieties contain living bacteria that are healthy for our digestive system (probiotics). Yoghurt can be made from whole or low fat milk. Fruit yoghurts often contain added sugar. Low fat doesn't necessarily mean low calories. For people who are watching their weight, should look for 'diet' versions, or should make their own by mixing fruit with natural, low fat, unsweetened yoghurt.

The Importance of Calcium

Milk and dairy products are an important source of calcium. Calcium is a mineral that helps build strong bones and teeth, regulates muscle contraction (including the heartbeat) and makes sure the blood is clotting normally. Calcium can continue strengthening the bones until the age of 20 to 25 when peak bone mass is reached. After this point, the bones can only maintain or lose their density and grow weaker as a natural part of the ageing process.

Inadequate dietary calcium intake before this age can increase the risk of brittle bone disease and osteoporosis, as calcium is drawn from the bones as a reserve.

Each year, in the UK, over £1.7 billion is spent on treating osteoporosis. Health professionals estimate that one in two women and one in five men over the age of 50 in the UK will break a bone; this mainly occurs because of osteoporosis. Women are more affected as they have less bone mass than men, and may lose it faster as they get older, especially after the menopause.

There's also concern that the diets of teenage girls and young women don't contain enough calcium. Some experts predict the future could bring an osteoporosis epidemic in women.

Why Children need Calcium

Calcium is an essential nutrient for all children to help them grow strong bones and reduce the risk of developing osteoporosis when they're older. But many children and teenagers don't receive their recommended daily intake.

Age (years)	Calcium requirement (mg/day)	
0 to 12 months	525	
1 to 3 years	350	
4 to 6 years	450	
7 to 10 years	550	
11 to 14 years	Male	Female
15 to 18 years	1000	800
19+ years	1000	800
	700	700

Encouraging children and adolescents to drink more milk, rather than other drinks, can provide not only calcium, but also important proteins, carbohydrates, and micronutrients.

Calcium for Vegans and the Lactose Intolerant

For the people who exclude milk and dairy products from their diet, or those who can't tolerate milk sugar lactose, must look for calcium alternatives. Other dietary sources of the mineral include:

- calcium-enriched soya milks, yoghurts, and cheeses;
- dark green leafy vegetables, such as spinach, broccoli, and watercress;
- almonds or sesame seeds;
- dried fruits - apricots, dates, and figs all contain small amounts of calcium; and
- (for non-vegans) fish, such as, sardines and anchovies, especially the bones

Three-a- Day

As dairy products are such a rich source of calcium, three portions of dairy products each day should be sufficient to meet the body's calcium needs. One should try to choose low or reduced fat versions to avoid too much unhealthy saturated fat. The following are examples of individual servings:

- 200ml milk (whether it is whole or full-fat, semi-skimmed or skimmed);
- 250ml calcium-fortified soya milk;
- 40g hard cheese (such as cheddar, brie, feta, mozzarella, or stilton);
- 125g soft cheese (such as cottage cheese or fromage frais);
- 1 small pot of low-fat plain or fruit yoghurt (150g); and
- Fruit smoothie made with 200ml milk or 150g yoghurt

Salt

Salt, which is also known as sodium chloride, is made up of 40 per cent sodium and 60 per cent chloride. This if found predominately in pre-prepared foods. Excessive use of salt can lead to high blood pressure and stomach cancer, and can exacerbate osteoporosis and asthma.

Why is it Needed?

The sodium component of salt is vital for controlling the amount of water in the body, maintaining a normal pH level in the blood, transmitting nerve signals, and helping muscular contraction. Salt is present in all foods in varying degrees, and almost all processed foods contain added salt.

Daily Requirements

Sodium, unlike all other minerals, is generally over consumed, with the dietary intake of salt in the UK being far in excess of the recommended daily requirement.

Adults are advised to consume no more than 6g salt per day (about one teaspoon). Current intake is about 9g per day – a third higher than is recommended for good health. Babies and children should have less salt than adults. High salt intake in babies can be especially dangerous, as their kidneys cannot cope with large amounts. Recommendations for babies and children are given below:

Age (years)	Salt (g/ day)
1- 32	(0.8g sodium)
4-6	3 (1.2g sodium)
7-10	5(2 g sodium)
11 plus	6 (2.4g sodium)

Caffeinated Drinks

Lots of popular drinks contain the stimulant caffeine.

Effects of Caffeine

Caffeine acts as a stimulant to the heart and the Central Nervous System, and is also known to increase blood pressure in the short term, although there's no conclusive evidence of long-term effects on blood pressure levels.

The effects on blood pressure are most likely when caffeine is taken in excessive quantities or by people who are highly sensitive to it. People who are hypertensive (have habitually high blood pressure) are advised to avoid caffeinated drinks and pregnant women should limit their intake of caffeine to less than 300mg a day.

Food	Caffeine content
Coffee (mg/cup)	
Instant	61 to 70
Percolated ground	97 to 125
Tea (mg/cup)	15 to 75
Cocoa (mg/cup)	10 to 17
Chocolate bar	60 to 70
Cola drinks (mg/12oz can)	43 to 65

Caffeine and Weight Loss

Caffeine has been shown to have very modest effects on increasing metabolism, and is sometimes added as an ingredient to weight loss pills. These pills often make claims about speeding metabolism to 'effortlessly melt' excess fat, but in reality the amount of calories that slimming pills containing caffeine would actually burn is very small. Caffeine may also suppress appetite, but without making other changes to the diet and lifestyle caffeine is unlikely to make a significant difference to the body weight.

Coffee

Coffee has been linked with a number of the risk factors for coronary heart disease, including increased blood pressure and raised blood cholesterol levels. But no relationship has been found between drinking coffee and the likelihood of developing coronary heart disease. Coffee may be beneficial in some areas of health - for example, research has found it may reduce the risk of developing gallstones and kidney stones.

It is difficult to suggest a safe limit for coffee intake because of the huge variation in caffeine content across different brands and an individual's sensitivity to the drug. People with high blood pressure and pregnant women are advised to limit their caffeine consumption.

For the rest of the population, there's no evidence coffee does any long-term harm. Caffeine does have a very mild diuretic effect but, drunk in moderation, one doesn't have to increase their fluid intake to any significant degree, since the loss of fluid is very minimal.

Tea

Tea contains some useful minerals such as zinc, manganese and potassium, and scientists are esearching its potential to reduce the risk of coronary heart disease and some cancers. Tea contains antioxidant substances called flavonoids, which has been shown to help slow or inhibit the chemical reactions thought to take place during the development of coronary heart disease.

Green Tea

There's also a lot of interest in the health benefits of green tea, particularly in relation to cardiovascular health. Again, this is due to flavonoids, which are powerful antioxidants found in high concentrations in both green and black teas. The concentration of these compounds depends on how long the tea has been brewed, but can range from 125mg to 140mg. Some studies have compared the concentration of these antioxidant compounds to that found in fruit and vegetables. Flavonoids bring potential benefits to heart health, as well as, possible reductions in the risk of Alzheimer's disease and other neurodegenerative conditions.

Caffeine and Iron Absorption

Both tea and coffee contain polyphenols that can bind to iron, making it difficult for our bodies to absorb the recommended doses, which are needed in our body. Avoiding tea and coffee during and around mealtimes is important for people at risk of iron deficiency.

Water/ Fluid

Why do we need Water?

Water makes up 50 to 70 per cent of an adult's total body weight and, without regular water intake, our body's survival time is limited to a matter of days. Water is essential for the body's growth and maintenance, as it is involved in a number of processes. For example, it helps get rid of waste and regulates temperature, and it provides a medium for biological reactions to occur in the body.

Water is lost from the body through urine and sweat, and must be replaced through the diet. If we don't consume enough we can become dehydrated, causing symptoms such as headaches, tiredness and loss of

concentration. Chronic dehydration can contribute to a number of health problems such as constipation and kidney stones.

How much do we Need?

The body gets its fluid from three sources:

- Drinks, either plain water or as part of other beverages including tea, coffee, and/or squash;
- Solid foods, especially fruits and vegetables (even foods such as bread and cheese provide small amounts of fluid); and
- As a by-product of chemical reactions within the body

Most healthy adults need between one and a half to three litres a day, so aim to drink six to eight medium glasses of fluid daily. Beverages such as tea, coffee and fruit juices count towards fluid intake, and may bring with them other nutrients or benefits.
One may require more fluid if the person is very physically active or during periods of hot weather.

There are two types: Spring Water and Mineral Water.

Spring water is collected directly from the spring where it rises from the ground, and must be bottled at the source. UK sources of spring water must meet certain hygiene standards, and may be further treated so they meet pollution regulations.

Mineral water emerges from under the ground, then flows over rocks before it is collected, resulting in a higher content of various minerals. Unlike spring water, it can't be treated except to remove grit and dirt. Different brands of spring and mineral waters have differing amounts of minerals depending on their source. The drinking water available from UK taps is perfectly adequate to replenish fluid loss, and undergoes many processes to bring it up to the standards set out in the UK Water Supply Regulations.

Different Cooking Methods

Barbecuing does not produce the same calorie content as frying and roast chicken does not have the same taste as boiled chicken. Each method of cooking has its own characteristics and its advantages and its disadvantages, in terms of taste and nutritional value.

Cooking = Change

All forms of cooking bring about chemical change. The most well known effect is the loss of vitamins, but heat also causes food to lose water and mineral salts. The dehydration effect is also harmful in nutritional terms: **pasta** and rice lose 2/3 of their protein, carbohydrates, vitamins and minerals. But heat can also have the opposite effect: it enriches cooked meat with protein, on the plus side, and fat on the down side. As for vitamins, recent research has shown that for some vegetables like **broccoli**, **cooking** can activate vitamins that were dormant.

Boiling:

Boiling can be done in two ways: The food can be placed into already rapidly boiling water and left to cook, the heat can be turned down and the food can be simmered; or the food can also be placed into the pot, and cold water may be added to the pot. This may then be boiled until the food is satisfactory. Water on the outside of a pot, i.e. a wet pot, actually increases the time it takes the pot of water to boil. The pot will heat at a normal rate once all excess water on the outside of the pot evaporates.

Foods Suitable for Boiling Include:

- Fish ;
- Vegetables;
- Pasta;
- Eggs;
- Meats;
- Sauces; and
- Stocks and soups

Advantages:

- Older, tougher, cheaper cuts of meat and poultry can be made digestible;
- It is appropriate for large-scale cookery;
- Nutritious, well flavoured stock is produced;
- It is safe and simple; and
- Maximum colour and nutritive value is retained when cooking green vegetables, provided boiling time is kept to the minimum

Disadvantages:

- There is a loss of soluble vitamins in the water;
- Boiling water with the lid on wears out the pot;
- It can be a slow method; and
- Foods can look unattractive
-

Baking

Baking is the technique of prolonged cooking of food by dry heat acting by conduction and not by radiation, normally in an oven. It is primarily used for the preparation of bread, cakes, pastries and pies, tarts, and quiches. It is also used for the preparation of baked potatoes; baked apples; baked beans; some pasta dishes, such as lasagne; and various other foods, such as pretzels.

Ingredients often used in baking;

- Butter, margarine, or other shortening;
- Flour;
- Sugar;
- Cocoa;
- Eggs; and
- Salt

Leavening agents, such as -

- Baking powder ;
- Yeast; and
- Baking soda

Grilling

Grilling is a form of cooking that involves direct heat. Devices that grill are called grills. The definition varies widely by region and culture. Grilling generally refers to cooking food directly under a source of direct, dry heat. The grill is usually a separate part of an oven where the food is inserted just under the element. Commonly grilled food and cooking methods:

- Steaks;
- Hot Dogs;
- Hamburger Patties, Cube Steaks;
- Sausage;
- Chicken Breasts;
- Chicken Thighs and Legs;
- Pork Chops;
- Fish;
- Shrimp;
- Asparagus; and
- Potatoes

Deep Fat Frying

Deep-frying is a cooking method whereby food is submerged in hot oil or fat. This is normally performed with a deep fryer or chip pan; industrially, a pressure fryer or vacuum fryer may be used. Deep frying is classified as a dry cooking method because no water is used. Due to the high temperature involved and the high heat conduction of oil, it cooks food extremely fast. If performed properly, deep-frying does not make food excessively greasy because the moisture in the food repels the oil: The hot oil heats the water within the food, steaming it from the inside out, oil cannot go against the direction of this powerful flow. As long as the oil is hot enough and the food is not immersed in the oil for too long, oil penetration will be confined to the outer surface. However, if the food is cooked in the oil for too long, too much of the water will be lost and the oil will begin to penetrate the food. The correct frying temperature depends on the thickness and type of food, but in most cases, it lies between 175 and 190 °C.

Disadvantages

- Deep frying produces large amounts of waste oil, which must be properly disposed;
- Deep fry shortenings contain trans. fat. Overall, this is very hazardous to your health; and
- Cooking oil is flammable and there have occasionally been fires caused by the oil igniting due to too high temperature. If one attempts to extinguish an oil fire with water, the water will boil, sending the burning oil in all directions and thus aggravating the fire. Instead, oil fires must be extinguished with dry powder or fire fighting foam. For this reason, most commercial deep fryers are equipped with automatic fire suppression systems using foam.

Stir Fry

Stir frying is an English umbrella term used to describe two fast Chinese cooking techniques: chao and bào. The two techniques differ in their speed of execution, the amount of heat used, and the amount of tossing done to cook the food in the wok. A traditionally round-bottom iron pan called a wok is heated to a high temperature. A small amount of cooking oil is then poured down the side of the wok, followed by dry seasonings then at the first moment the seasonings can be smelled, meats are added and agitated. Once the meat is seared, vegetables along with liquid ingredients are added.

Dry Fry

In these health-conscious times, dry-frying has become a popular way of cooking fish and certain types of meat, especially, bacon rashers. First, heat a frying pan with a heavy bottom on a high flame until it is hot. Meanwhile, prepare the meat or fish. If it has little fat of its own, drizzle a small amount of oil over the surface and rub it in. However, if the meat has natural fat or the fish is oily, simply season with freshly ground black pepper. When the pan is hot, add the meat or fish and then leave it. Do not be tempted to move the food around in the pan until a crust has formed. You will then be able to slide an egg slice or palette knife underneath and turn to cook on the other side. Dry-frying is also used to extract and bring out the flavour of whole spices, seeds or nuts. Fry them without fat in a heavy-bottomed pan over a high heat, shaking the pan from time to time. Continue cooking, watching carefully to avoid burning, until they give off a distinct aroma, and then tip them onto a cold plate.

Shallow Fry

Shallow frying is the cooking of food in a small quantity of pre-heated fat or oil in a shallow pan or on a flat surface (griddle plate). There are three methods of frying using a shallow amount of fat or oil.

- Shallow Fry: cooking the food in a small amount of fat or oil in a frying pan or sauté pan. The presentation side of the food should be fried first as this side will have the better appearance because the fat is clean, then, turned so that both sides are cooked and coloured.
- Sauté: cooking tender cuts of meat and poultry in a sauté or frying pan. After cooking, the fat is discarded and the pan is deglazed with stock or wine. This forms an important part of the finished sauce. Only tender foods can be used. This is also used when cooking, for example, potatoes or

onions when they are cut into slices or pieces and tossed in hot shallow fat or oil in a frying pan till golden brown.

- Griddle: e.g. hamburgers, sausages, and sliced onions, are placed on a lightly oiled, pre-heated griddle (solid metal plate), and turned frequently during cooking.

Advantages

- Quick method of cooking;
- No loss of soluble nutrients; and
- Good colour

Disadvantages

- Only suitable for expensive cuts of meat;
- Not easily digested; and
- Requires supervision

Roasting

Roasting is a cooking method that utilizes dry heat, whether an open flame, oven, or other heat source. Roasting usually causes caramelization of the surface of the food, which is considered a flavour enhancement. Meats and most root and bulb vegetables can be roasted. Any piece of meat, especially red meat that has been cooked in this fashion is called a roast. Also, meats and vegetables prepared in this way are described as "roast", e.g., roast chicken or roast squash. Some foods such as coffee and chocolate are always roasted.

Microwaving

Microwaving is employing microwave radiation primarily to cook or heat food. Microwaving is an extremely rapid method of cooking meat. The use of lower power (30% power) is recommended for more uniform cooking especially for larger meat cuts. Microwave cooking is not recommended for cuts which are less tender as microwave cooking does not tenderize meats as slower cooking methods do. Meats, which are suitable for microwave cooking, include:

- processed meats such as hotdogs, bacon, and meat loaves;
- precooked items; and
- some boneless fresh meat cuts

Stewing

In cooking, stewing means preparing vegetables or meat by simmering in liquid. Unlike braising, the ingredients are generally diced. A stew may be either simmered in a pot on the stove top or cooked in a covered casserole in the oven. Stewing is suitable for the least tender cuts of meat that become tender and juicy with the slow moist heat method. This makes it popular in low-cost cooking. Cuts having a certain

amount of marbling and gelatinous connective tissue give moist, juicy stews, while lean meat may easily become dry.

Stews may be thickened by reduction, but are more often thickened with flour, either by coating pieces of meat with flour before searing, or by using a roux or beurre manié, a dough consisting of equal parts of butter and flour.

Poaching

Poaching is the process of gently simmering food in liquid, generally water, stock or wine. Poaching is particularly suitable for fragile food, such as, eggs, poultry, fish, and fruit, which might easily fall apart or dry out. For this reason, it is important to keep the heat low and to keep the poaching time to a bare minimum, which will also preserve the flavour of the food. The poaching liquid is called court bouillon and a classical court bouillon consists of: an acid (wine, lemon juice), aromatic (bouquet garni), poaching liquid, and mirepoix. The liquid should be around 160-185°F (70-85°C), and always remember that to serve chicken safely it has to have reached a temperature of 165°F (74°C) in the core. Poached eggs are generally cooked in water, fish in white wine, poultry in stock and fruit in red wine.

Steaming

Steaming is a method of cooking using steam. It is a preferred cooking method for health conscious individuals because no cooking oil is needed, thus, resulting in a lower fat content. Steaming also results in a more nutritious food than boiling because fewer nutrients are destroyed or leached away into the water (which is usually discarded). It is also easier to avoid burning food when steaming. Steaming works by first boiling water, causing it to evaporate into steam; the steam then carries heat to the food, thus cooking the food. Such cooking is most often done by placing the food into a steamer, which is a typically a circular container made of metal or bamboo. The steamer usually has a lid that is placed on the top of the container during cooking, to allow the steam to cook the food.

Toasting

Cooking to a brown crispiness over a fire or on a grill; “proper toasting should brown both sides of a piece of bread”. This is done using a toaster like the one below.

Slow Cooking

Raw food and a liquid which is predominantly water, such as water, wine, and stock, (but not oil without water), are placed in the slow cooker. Some recipes work best if the liquid which is added to the other ingredients has been already heated to boiling point, for example, in a kettle. Recipes intended for other cooking methods must be modified for slow cookers. Often water must be decreased, as cooking at higher temperatures requires enough liquid to allow for evaporation.

Some slow cookers are supplied with recipe booklets, however, many slow cooking recipes can be found in cookbooks and on the internet. A small number of cookbooks seek to make complete dishes in a slow cooker using fewer than five ingredients, while others treat the slow cooker as a serious piece of culinary equipment capable of producing gourmet meals.

With some experience, timing and recipe adjustments can be successfully made for many recipes, which may not have been originally intended for these cookers. The long, moist nature of the cooking method gives good results even with cheaper (and tougher) cuts of meat, in fact, cheaper cuts often have more flavour.

Further Reading:

- ✓ ***The Body Ecology Diet: Recovering Your Health and Rebuilding Your Immunity, (2011),By Donna Gates, Linda Schatz***
- ✓ ***Principles and Applications of Modified Atmosphere Packaging of Foods, (1999), By B. A. Blakistone***